



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,793	10/20/2005	Kenneth M. Evans	XY-Hypodermic-USNP	8305
88484	7590	08/19/2010		
CR MILES P.C. 405 Mason Court, Suite 119 Fort Collins, CO 80524			EXAMINER FRITCHMAN, REBECCA M	
			ART UNIT	PAPER NUMBER
			1797	
			NOTIFICATION DATE	DELIVERY MODE
			08/19/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

crmiles@crmiles.com  
cewell@sexingtechnologies.com  
patents@sexingtechnologies.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/524,793	<b>Applicant(s)</b> EVANS, KENNETH M.	
	<b>Examiner</b> REBECCA FRITCHMAN	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 & 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***Detailed Action  
Summary***

This is the Supplemental Final Office action based on the 10/524793 application RCE attorney response filed on 07/16/2010.

Claims 1-14 & 27 are pending and have been fully considered.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**1. Claims 1-14, & 27 are rejected under 35 U.S.C. 103(a) as being obvious over BUCHANAN in US 6604435 and in view of BLANKENSTEIN in Coaxial Flow Mixer for Real-Time Monitoring of Cellular Responses in Flow Injection Cytometry.**

With respect to Claim 1, BUCHANAN et al. teaches of a method of flow cytometry which focuses on sorting delicate cells, especially living sperm cells(which are obviously from male species of mammals)(column 1, lines 11-18). BUCHANAN et al. also teach injecting fluid into a ribbon flow (which has a central longitudinal axis) through an injection point (column 8, line 62-67 & column 9, lines 1-9). In addition to that, BUCHANAN et al also teaches of a liquid flow cytometer system where a sample is processed into individual droplets prior to being analyzed and sorted (column 5, lines

Art Unit: 1797

26-31). Also, BUCHANAN et al. teach of sorting sperm containing drops by the sorting device (obviously two or more groups) (column 10, lines 33-37). BUCHANAN et al. do not specifically teach of the adjustable injection point. BLANKENSTEIN however teach of a coaxial flow mixer for monitoring of cellular responses in flow cytometry in which the axial injection point is variably adjusted along the central longitudinal axis (inner capillary being injection point, outer capillary being the nozzle, inner capillary being gradually withdrawn) (abstract & Figure 1, & Page 201, column 2, paragraph 2, page 202, column 1, paragraph 1 & 2). It would have been obvious to one of ordinary skill in the art to combine the method use the adjustable injection point of BLANKENSTEIN with the flow cytometry method for sorting delicate cells of BUCHANAN due to the need in the art for an effective and practical means with which to perform rapid kinetic studies on cellular suspensions (Page 201, column 1, paragraph 2)

With respect to Claim 2, BUCHANAN et al. teaches of the use of bovine and equine sperm cells which have been stained and sorted by their DNA content (column 15, lines 5-10).

With respect to Claim 3, BUCHANAN et al. teaches of the sample stream being drawn into a thin ribbon by the sheath fluid (column 6, lines 36-37).

With respect to Claim 4, BUCHANAN et al. teaches of sperm cells being buffered in specifically prepared sperm compatible buffer (column 10, lines 41-44). Citrate, phosphate, and HEPES buffer are all well known in the art and would have been obvious to use.

With respect to Claim 5, BUCHANAN et al. teaches of obtaining sperm cells of the male and female bovine and equine species wherein the step of injecting sperm cells into the sheath fluid comprises injecting sperm cells from the selected groups into the sheath fluid at an injection point (Claim 10 & 17). It is obvious to one of ordinary skill in chemical analysis to inject the sperm cells of the first and second species at different injection points to allow for differentiation between the species during analysis.

With respect to Claim 6, BUCHANAN et al. teach of adjusting the injection point by use of a beveled tip where by the preferred amount of beveling is 4 degrees(column 6, lines 40-67, column 7, lines 1-27).

With respect to Claim 7, BLANKENSTEIN et al. teach of a coaxial flow mixer for monitoring of cellular responses in flow cytometry in which the axial injection point is variably adjusted along the central longitudinal axis (slidable/withdrawn) (inner capillary being injection point, outer capillary being the nozzle, inner capillary being gradually withdrawn) (abstract & Figure 1, & Page 201, column 2, paragraph 2, page 202, column 1, paragraph 1 & 2).

With respect to Claim 8, BLANKENSTEIN et al. teach of a coaxial flow mixer for monitoring of cellular responses in flow cytometry in which the axial injection point is variably adjusted along the central longitudinal axis (slidable/withdrawn) (inner capillary being injection point, outer capillary being the nozzle, inner capillary being gradually withdrawn) (abstract & Figure 1, & Page 201, column 2, paragraph 2, page 202, column 1, paragraph 1 & 2). This is equivalent method to the slidable valve and therefore would be considered obvious to one of ordinary skill in the art.

Art Unit: 1797

With respect to Claim 9, BUCHANAN et al. teaches of adjusting the injection point by use of a beveled tip where by the preferred amount of beveling is 4 degrees(column 6, lines 40-67, column 7, lines 1-27). BUCHANAN et al. also teaches of varying the size of the nozzle, height and the diameter(column 7, lines 9-15) through which the distance between injection points of the sperm cells into the fluid stream would be altered.

With respect to Claim 10, BUCHANAN et al. teaches of adjusting the injection point by use of a beveled tip where by the preferred amount of beveling is 4 degrees( 4 degrees is the optimum for preferred stream resolution)(column 6, lines 40-67, column 7, lines 1-27). BUCHANAN et al. also teaches of varying the size of the nozzle, height and the diameter (column 7, lines 9-15) through which the distance between injection point of the sperm cells into the fluid stream would be altered.

With respect to Claim 11, BUCHANAN et al. teach of adjusting the injection point by use of a beveled tip where by the preferred amount of beveling is 4 degrees( 4 degrees is the optimum for preferred stream resolution)(column 6, lines 40-67, column 7, lines 1-27). BUCHANAN et al. also teach of the sample stream being drawn into a thin ribbon(due to the beveling) by the sheath fluid, the resulting change in flow condition causing a corresponding orientation of the sample material (column 6, lines 35-39).

With respect to Claim 12, BUCHANAN et al. teach of et al. teach of adjusting the injection point by use of a beveled tip where by the preferred amount of beveling is 4 degrees( 4 degrees is the optimum for preferred stream resolution)(column 6, lines 40-

Art Unit: 1797

67, column 7, lines 1-27). BUCHANAN et al. also teach of the sample stream being drawn into a thin ribbon(due to the beveling) by the sheath fluid, the resulting change in flow condition causing a corresponding orientation of the sample material (column 6, lines 35-39).

With respect to Claim 13, BUCHANAN et al. teaches of sorting delicate cells, especially sperm cells (column 1, lines 16-17).

With respect to Claim 14, BUCHANAN et al. teaches of sorting delicate cells, especially sperm cells (column 1, lines 16-17). BUCHANAN et al. also teaches of the sperm containing drops being sorted by the sorting device and collected by the sperm-compatible collecting system wherein the X or Y chromosome bearing sperm may be used for insemination (column 10, lines 50-57).

With respect to Claim 27, Examiner takes notice of the equivalence of a slidably adjustable valve (slidable engagement between particle injector and nozzle body) to a key stop mated with a nozzle body in adjusting, selectively and variably the injection point. This is also evidenced in applicants arguments dated 04/29/2009, (page 1, paragraph 2).

### ***Response to Arguments***

Applicant's arguments, see remarks, filed 07/16/2010, with respect to the rejection(s) of claim(s) 1-14 & 27 under 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further

Art Unit: 1797

consideration, a new ground(s) of rejection is made in view of BUCHANAN in view of BLANKENSTEIN.

Applicant's arguments with respect to claims 1-14 & 27 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to REBECCA FRITCHMAN whose telephone number is (571)270-5542. The examiner can normally be reached on Monday- Friday 7:30-5:00.



Art Unit: 1797

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim, Vickie can be reached on 571-272-0579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

R.F.

/Krishnan S Menon/

Primary Examiner, Art Unit 1797